

Application Serial No. 09/975,600

Claim List

1. (canceled).
2. (canceled).
3. (currently amended) A vibration-inhibiting flooring structure for use in a facility housing vibration-sensitive equipment, comprising:  
a bearing floor for supporting the vibration-sensitive equipment;  
a plurality of openings extending through said bearing floor, said plurality of openings configured to inhibit the propagation of vibrations across said bearing floor. The vibration-inhibiting flooring structure of claim 1, wherein at least some of said openings are partially or completely filled with a vibration-dampening material.
4. (original). The vibration-inhibiting flooring structure of claim 3, wherein said vibration-dampening material comprises a material selected from a group consisting of plastic, sponge, and rubber.
5. (original). The vibration-inhibiting flooring structure of claim 3, wherein said vibration-dampening material preferentially inhibits one vibration mode over another vibration mode.
6. (canceled).
7. (currently amended) A vibration-inhibiting flooring structure for use in a facility housing vibration-sensitive equipment, comprising:  
a bearing floor for supporting the vibration-sensitive equipment;  
a plurality of openings extending through said bearing floor, said plurality of openings configured to inhibit the propagation of vibrations across said bearing floor. The vibration-

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~~inhibiting flooring structure of claim 1~~, wherein a subset of said plurality of openings includes an air-impervious member.

8. (canceled).

9. (canceled).

10. (canceled).

11. (canceled).

12. (canceled).

13. (canceled).

14. (currently amended) A vibration-inhibiting flooring structure for use in a facility housing vibration-sensitive equipment, comprising:

a bearing floor for supporting the vibration-sensitive equipment;

a plurality of openings extending through said bearing floor, said plurality of openings configured to inhibit the propagation of vibrations across said bearing floor. ~~The vibration-inhibiting flooring structure of claim 1~~, wherein said plurality of openings comprise a two-dimensional area which is between about 20% and 30% of the total two-dimensional area of said bearing floor which includes said openings.

15. (currently amended) A vibration-inhibiting flooring structure for use in a facility housing vibration-sensitive equipment, comprising:

a bearing floor for supporting the vibration-sensitive equipment;

a plurality of openings extending through said bearing floor, said plurality of openings configured to inhibit the propagation of vibrations across said bearing floor. ~~The vibration-inhibiting flooring structure of claim 1~~, wherein said plurality of openings comprise a two-

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dimensional area which is about 25% of the total two-dimensional area of said bearing floor which includes said openings.

16. (canceled).

17. (currently amended) A vibration-inhibiting flooring structure for use in a facility housing vibration-sensitive equipment, comprising:  
a bearing floor for supporting the vibration-sensitive equipment;  
a plurality of openings extending through said bearing floor, said plurality of openings configured to inhibit the propagation of vibrations across said bearing floor. ~~The vibration-inhibiting flooring structure of claim 1,~~ wherein vibration testing, in accordance with generic vibration criterion (VC) testing, exhibits horizontal vibration amplitudes bounded by the VC-D curve and vertical vibration amplitudes bounded by the VC-B curve.

18. (currently amended) A vibration-inhibiting flooring structure for use in a facility housing vibration-sensitive equipment, comprising:  
a bearing floor for supporting the vibration-sensitive equipment;  
a plurality of openings extending through said bearing floor, said plurality of openings configured to inhibit the propagation of vibrations across said bearing floor, wherein said plurality of openings form a regular array of openings having a shape selected from a group consisting of rectangular, square, trapezoidal, triangular, circular, and elliptical. ~~The vibration-inhibiting flooring structure of claim 2,~~ and wherein said plurality of openings comprise a regular array of square openings having two-foot sides and are arranged sixteen feet apart in an x direction and twenty feet apart in a y direction.

19. (original). The vibration-inhibiting flooring structure of claim 18, wherein the thickness of said bearing floor is about two feet.

20. (canceled).

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21. (canceled).
22. (canceled).
23. (canceled).
24. (canceled).
25. (canceled).
26. (currently amended) A vibration-inhibiting flooring structure for use in a facility housing vibration-sensitive equipment, comprising:  
a bearing floor for supporting the vibration-sensitive equipment;  
a plurality of openings extending through said bearing floor, said plurality of openings configured to inhibit the propagation of vibrations across said bearing floor. ~~The vibration-inhibiting flooring structure of claim 1,~~ wherein at least some of said openings are partially or completely filled with a vibration-dampening material.
27. (original). The vibration-inhibiting flooring structure of claim 26, wherein said vibration-dampening material comprises a material selected from a group consisting of plastic, sponge, and rubber.
28. (original). The vibration-inhibiting flooring structure of claim 26, wherein said vibration-dampening material preferentially inhibits one vibration mode over another vibration mode.
29. (canceled).
30. (currently amended) A vibration-inhibiting flooring structure for use in a facility housing vibration-sensitive equipment, comprising:

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a bearing floor for supporting the vibration-sensitive equipment;  
a plurality of openings extending through said bearing floor, said plurality of openings  
configured to inhibit the propagation of vibrations across said bearing floor. The vibration-  
inhibiting flooring structure of claim 1, wherein a subset of said plurality of openings  
includes an air-impervious member.

- 31. (canceled).
- 32. (canceled).
- 33. (canceled).
- 34. (canceled).
- 35. (canceled).
- 36. (canceled).
- 37. (canceled).
- 38. (canceled).
- 39. (canceled).
- 40. (canceled).
- 41. (canceled).

42. (original) A reconfigurable, vibration-inhibiting clean room facility capable of supporting vibration-sensitive equipment, said clean room facility comprising:

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a perforated floor comprising a plurality of solid regions interposed with a plurality of openings configured in a regular array;  
a facilities room located below said perforated floor;  
a ceiling located above said perforated floor;  
a clean room defined by a plurality of clean room walls moveably attached to said perforated floor and said ceiling, said clean room encompassing a first set of said openings;  
a plenum area defined by at least one of said clean room walls and at least one second wall, said plenum area encompassing a second set of said openings disjoint from said first set of said openings;  
cleaning apparatus configured to: force air from said clean room to said facilities room through said first set of openings; force air from said facilities room to said plenum area through said second set of openings; and force air into said clean room through said ceiling, wherein said air is cleaned prior to forcing said air into said clean room.

43. (original) The clean room facility of claim 42, further including:  
one or more filters in said ceiling above said clean room;  
one or more blowers in said ceiling above said plenum.
44. (original) The clean room facility of claim 42, further including a plurality of columns supporting said perforated floor.
45. (original) The clean room facility of claim 42, wherein a portion of said openings includes an insert.
46. (original) The clean room facility of claim 42, wherein said insert is air-permeable.
47. (original) The clean room facility of claim 42, wherein a portion of said openings includes a removable air-impervious member.

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48. (original) The clean room facility of claim 42, wherein:  
said columns include vertical reinforcing bar;  
said perforated floor includes horizontal reinforcing bar; and  
said vertical reinforcing steel bar is secured to said horizontal reinforcing bar.

49. (original) The clean room facility of claim 42, wherein said plurality of openings are arranged in a regular array of openings having a shape selected from a group consisting of rectangular, square, trapezoidal, triangular, circular, and elliptical.

50. (original) The clean room facility of claim 42, wherein at least some of said openings are partially or completely filled with a vibration-inhibiting material.

51. (original) The clean room facility of claim 42, wherein said plurality of openings comprise a two-dimensional area which is between about 5% to 60% of the total two-dimensional area of said perforated floor which includes said openings.

52. (original) The clean room facility of claim 42, wherein said plurality of openings comprise a two-dimensional area which is between about 20% and 30% of the total two-dimensional area of said perforated floor which includes said openings.

53. (original) The clean room facility of claim 42, wherein said plurality of openings comprise a two-dimensional area which is about 25% of the total two-dimensional area of said perforated floor which includes said openings.

54. (original) A method of reconfiguring a vibration-inhibiting clean room facility, said method comprising the steps of:  
providing a perforated floor comprising a plurality of solid regions interposed with a plurality of openings configured in a regular array;  
providing a facilities room below said perforated floor;  
providing a ceiling above said perforated floor;

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defining a clean room by moveably attaching a plurality of clean room walls to said perforated floor and said ceiling, wherein said clean room encompasses a first set of said openings;

defining a plenum area adjacent said clean room, wherein said plenum area is defined by at least one of said clean room walls and at least one second wall, wherein said plenum area encompasses a second set of said openings disjoint from said first set of said openings;

providing cleaning apparatus configured to: force air from said clean room to said facilities room through said first set of openings; force air from said facilities room to said plenum area through said second set of openings; and force air into said clean room through said ceiling, wherein said air is cleaned prior to forcing said air into said clean room; and

relocating one of said clean room walls such that:

- (a) said clean room is expanded to encompass at least one of said second set of openings previously encompassed by said plenum area, or
- (b) said plenum area is expanded to encompass at least one of said first set of openings previously encompassed by said clean room.

55. (original) The method of claim 54, further including the steps of:  
providing, prior to said relocating step, one or more removable filters in said ceiling above said clean room;  
providing, prior to said relocating step, one or more removable blowers in said ceiling above said plenum;  
moving, after said relocating step, said filters and said blowers such that said filters are located over said clean room and said blowers are located over said plenum.